ENABLING ELECTRICAL POWER SYSTEMS INTEGRATION

The shift to distributed generation is changing long-established concepts about how electricity should be produced, transmitted, and used. Power flow through the grid is becoming more decentralized and bidirectional. Local measurement, fault detection, and remote control are now essential for stability and intelligent load management. A new approach is needed—one that encourages greater use of renewable sources and facilitates interconnection of distributed power generation using advanced monitoring, communication, and control. Woodward is recognized as a leader in the field of advanced power generation and distribution control products.

We continue to build on our legacy by creating cutting-edge control and protection devices, designed to work in complex systems to meet the needs of tomorrow’s smart grids. Our global strategy is melding all aspects of power generation and distribution to enable electrical power systems integration.
ELECTRICAL PLANT ENGINEERING, A GREAT COST SAVING METHOD

The consideration of all electrical and mechanical properties of a power station as a whole at an early stage (during planning) can save a huge amount of money, just by time savings on-site. Complex system can be planned with a highest degree of accuracy and surprises on-site are reduced or even eliminated. Erection costs can stay within budget and the predictable speed of launch helps the operator to start production without avoidable delays. As a side-effect, the work is performed according to the latest technical standards and safe operation is granted beyond the warranty period.

BEST PRACTICE
Woodward Power Solutions provided Electrical Plant Engineering for a 1 GW Diesel-fired Power Station in Brazil consisting of 6 power houses with 120 Gensets in total.

OUR OFFER INCLUDES
As a recognized provider of electrical equipment for Power Stations, Woodward Power Solutions offers a wide range of services, aligned with the needs of our OEM’s and end-customers:

- cable route engineering
- cable selection/dimensioning
- cable tray selection
- consideration of heat dissipation and acc. to Bundling
- structural analysis of cable trays (seismic zones, wind load)
- cable list and cable drum selection
- earthing concept
- detection of collisions with other works
- documentation
- cable installation supervision

FIT FOR THE FUTURE: CYBER ENVIRONMENT

When the engineering of cables and cable trays is once done, the 2D/3D data of the electrical plant engineering can be checked on collisions with other works (e.g. Piping, cable cellar, etc.) On a virtual basis the engineering of the complete Power Station can be checked and the construction can be optimized iteratively on demand.

RIGHT MATERIAL, RIGHT MOMENT, RIGHT PLACE, SHIPMENT IN LOTS

Since 1968, Woodward Power Solutions has realized remarkable projects in the field of cement plants, airports, naval bases, power ships and, naturally, classic stations generating up to 1 GW of power. In so doing, a great many individual conditions had to be considered, e.g. ship specifications for power ships or special requirements for a power station in Chile with a maximum altitude of 5200 m asl.

CLOSED LOOP: MATERIAL, DOCUMENTATION, APPROVALS

Can the mechanical construction carry the cable load and resist shock/vibration at the same time? Woodward Power Solutions delivers all verifiable documentation along with the structural analysis for worst case consideration (earthquake, wind load, etc.) Thus, OEM customers and operators are always on the safe side.

BEST PRACTICE
The heat dissipation is calculated based on the calculated current flows, installation documentation gives instructions for erection staff.